DOCUMENT RESUME

ED 334 247 TM 016 808

AUTHOR Lunenburg, Fred C.
TITLE The 16PF as a Predictor of Principal Performance: An Integration of Quantitative and Qualitative Research Methods.
PUB DATE Apr 90
NOTE 15p.; Paper presented at the Annual Meeting of the American Educational Research Association (Boston, MA, April 16-20, 1990).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Case Studies; Elementary Secondary Education; *Instructional Leadership; *Performance; *Personality Traits; *Predictor Variables; *Principals; Qualitative Research; Regression (Statistics); School Administration; *Time Management
IDENTIFIERS Performance Based Evaluation; *Sixteen Personality Factor Questionnaire

ABSTRACT

The relationship between a broad set of personality factors and principals' performance was studied using the Sixteen Personality Factor Questionnaire (16PF). How high and low performing principals actually spent their time on the job was a secondary focus of the study. Subjects were 46 elementary school and 33 secondary school principals (96% were males) from a large metropolitan area in the Midwest. The subjects were divided into four groups of 19 to 20 members each corresponding to four divisions or pods comprising the administrative structure of the school district. In the study of time utilization, four high school principals with average and above average performance ratings were observed using the case study method. Subjects were administered the 16PF, and performance was rated by senior administrators of the school system. Results provide some predictive validity support for the relationship between factors measured by the 16PF and principal performance. The superior principal was more educated, assertive, imaginative, self-sufficient, and warmhearted. The study failed to predict the way in which principals spent their time from either their performance ratings or personality profiles. One table summarizes the multiple regression analysis. (SLD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED334247

THE 16PF AS A PREDICTOR OF PRINCIPAL PERFORMANCE: AN INTEGRATION OF QUANTITATIVE AND QUALITATIVE RESEARCH METHODS

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

FRED C. LUNENBURG

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Fred C. Lunenburg
University of Louisville

Paper presented at the annual meeting of the American Educational Research Association, Boston, Massachusetts, April 1990

TM 016 808

BEST COPY AVAILABLE

THE 16PF AS A PREDICTOR OF PRINCIPAL PERFORMANCE: AN INTEGRATION OF QUANTITATIVE AND QUALITATIVE RESEARCH METHODS

Because of the potential impact a principal can have on schools and society, it is important to predict his or her behavior. Some evidence from the private sector suggests that managerial performance can be anticipated through the use of bio-data variables (Leap & Crino, 1989; Mathis & Jackson, 1988; Schuler & Youngblood, 1986; and Miner, 1985) but little information is available that uses psychological variables to predict the performance of educational administrators. Evidence that high performing principals possess particular personality traits may augment procedures for the selection of prospective principals, and provide high inference predictions concerning subsequent on-the-job performance.

The primary purpose of this study was to explore the relationship between a broad set of personality factors and principals' performance. A secondary purpose of the study, based on the previous analysis, was to examine how high and low performing principals actually spend their time on the job.

METHOD

Subjects

Relative to the first question examined in this research, subjects were 79 elementary and secondary school principals from a large metropolitan area in the Midwest. The 79 principals, 46 elementary

and 33 secondary, ranged in age from 34 to 63 with a mean age of 46 and were approximately 96% male. Relative to the second question examined in this study, four high school principals who received average and above average performance ratings were observed indepth using the case study method.

Instrumentation

The subjects were administered the Sixteen Personality Factor Questionnaire (16PF). The 16PF (Cattell, Eber, Tatsuoka, 1986) is a self-report inventory designed to assess major personality dimensions. These dimensions were derived through factor analysis of over 100 components related to personality, each independent of all others. The 16 bipolor personality factors have adjectives to describe extremes of each scale. The 16 primary dimensions with their factor letter notations are described below:

A.	Cool. reserved, impersonal, detached, formal, aloof	Warm. outgoing, participating, easy-going, likes people
B.	Concrete-thinking. less intelligent	Abstract-thinking. more intelligent, bright
C.	Affected by feelings. emotionally less stable, easily annoyed	Emotionally stable. mature, faces reality, calm, patient
E.	Submissive. humble, mild, easily led, accommodating	Dominant. assertive, aggressive, stubborn, competitive, bossy

F.	Sober. restrained, prudent, taciturn, serious	Enthusiastic. spontaneous, heedless, expressive, cheerful
G.	Expedient. disregards rules, self-indulgent	Conscientious. conforming, moralistic, staid, rule-bound
H.	Shy. threat-sensitive, timid, hesitant, intimidated	Bold. venturesome, uninhibited, can take stress
I.	Tough-minded. self-reliant, no-nonsense, rough, realistic	Tender-minded. sensitive, overprotected, intuitive, refined
L.	Trusting. accepting conditions, easy to get on with	Suspicious. hard to fool, distrustful, skeptical
M.	Practical. concerned with "down-to-earth" issues, steady	Imaginative. absent-mined, absorbed in thought, impractical
N.	Forthright. unpretentious, open, genuine, artless	Shrewd. polished, socially aware, diplomatic, calculating
O.	Self-assured. secure, feels free of guilt, untroubled, self-satisfied	Apprehensive. self-blaming, guilt-prone, insecure, worrying
Q_1	Conservative. respecting traditional ideas	Experimenting. liberal, critical, open to change
Q_2	Group-oriented. a joiner and sound follower, listens to others	Self-sufficient. resourceful, prefers own decisions
Q_3	Undisciplined self-conflict. lax, careless of social rules	Controlled. socially precise, following self-image, compulsive

Q_4	Relaxed. tranquil, torpid, unfrustrated	Tense. frustrated, driven, restless, overwrought

Cattell, et al. (1986) have characterized the 16 identified factors as follows: "They leave out no important aspect of the total personality; they are relatively independent of each other; and they are all known to be important in the sense of having a wide influence on behavior." Cattell et al. (1986) have reported reliability and validity evidence for the 16 factors measured by the instrument primarily in terms of factor loadings.

Procedures

The subjects (n=79) were divided into four groups of 19 to 20 members each corresponding to four divisions or pods comprising the administrative structure of the school district. A senior-level administrator directed and supervised the activities of the building administrators in his or her division or pod and was acquainted with the principals' performance. To minimize bias in determining a performance rating, four criteria of a principal's success were used to derive an overall performance score.

The first criterion was the annual division supervisor's rating (SR), ranked on a five-point scale from 1 (low) to 5 (high). The second criterion of success was a paired comparison (PC) rating obtained as follows: each division supervisor acquainted with each

principal's performance was given a deck of cards containing the names of two principals. Each principal's name was paired once with each other principal's name. The supervisor was asked to make a global judgment as to which was the better principal, and to mark his choice on the card. The PC score for each principal was the total number of marks for that principal.

The third criterion was a peer nomination (PN) rating. Each division participant was asked to nominate three members of his pod who, in his opinion, ranked highest on the following characteristic: Ability to facilitate an effective school operation. Peer nomination scores for each subject were computed as the absolute number of nominations on the characteristic. The fourth criterion was a teacher rating (TR). From a list of faculty members provided by the subjects, the researcher randomly selected four teachers from each of the principal's buildings using a table of random numbers. Each teacher was asked to rank his or her principal on the following characteristic: Capacity to lead and supervise subordinates, 1 = low to 5 = high. An overall performance score (OPS) was obtained by weighting and summing each of the four criteria equally: $OPS = .25(SR) + .25(PC) + .25(PN) + .25(TR)$.

Data collection procedures for the case studies (n = 4) were patterned after the classic ethnographic works of Harry Wolcott (1973) and Henry Mintzberg (1973). Data on the four principals were collected during two rounds of field research amounting to

approximately two weeks in duration. The data sources included on-site school observations, in-depth interviews with the principals and their faculty and staff, document analysis, detailed time logs in which principals recorded how they spent each 15-minute block of time on selected days, and questionnaire data from principals concerning their tasks and functions.

RESULTS

In order to investigate the relationship between the personality factors of the 16PF and principals' performance, a step-wise multiple regression analysis was done with performance as the criterion variable. Standard use of step-wise regression was employed. That is, the first predictor variable added was the one that correlated highest with the criterion; the next variable added was the one that, in concert with the first, best predicted the criterion, and so on. Each successive predictor variable which was added, was the variable which had the highest partial correlations with the criterion variable partialed on the predictors already in the equation.

Demographic variables including experience, age, type of school (elementary or secondary), and education level (masters or doctorate) as well as the personality factors of the 16PF were all used as predictor variables. Factors E (submissive/dominant), M (practical/imaginative), Q_2 (group-oriented/self-sufficient), A (cool/warm), and education level (masters or doctorate) were the

best predicators of principal performance ($R = .64$, $p < .01$). The data are summarized in Table 1.

- - - - - - - - - - - - - - - - - - - -

TABLE 1 HERE

- - - - - - - - - - - - - - - - - - - -

Only four of the 16 zero order correlations between the personality factors and performance were statistically significant. Factor E was the personality dimension with the strongest zero order correlation with performance ($r = .43$, $p < .01$). Other zero order correlations between personality factors and performance were as follows: Factor A (.34, $p < .01$), Factor B (.03), Factor C (.10), Factor F (.02), Factor G (.09), Factor H (.13), Factor I (-.04), Factor M (.32, $p < .01$), Factor N (-.15), Factor O (-.06), Factor Q_1 (.18), Factor Q_2 (.28, $p < .01$), Factor Q_3 (.12), and Factor Q_4 (-.09).

Case Studies

The data collected during the case studies indicated that there were both similarities and differences in the way the principals in this study spent their time, but the differences were neither related to the performance ratings these principals received nor to their personality profiles. All were involved in monitoring budgetary

controls within their buildings, monitoring programs and instructional processes prescribed by central office, and communicating with students, staff, and the community as a spokesperson for the school district.

Differences in the way principals spent their time emerged from the in-depth interviews with principals, their detailed time logs, and questionnaire data provided by them. There were vast discrepancies in the amount of time principals spent on classroom supervision and staff development. Some principals spent as much as one-third of their time on these activities, others as little as one-tenth of their time. Another area in which differences emerged was in the time principals spent on student discipline. Some principals spent 30% of their time on student discipline, while others spent hardly any time at all because they delegated these duties to their assistant principals. Most principals delegated scheduling, general building supervision, and pupil attendance monitoring almost totally to their assistant principals or other designated subordinate, while others shared in these duties.

DISCUSSION

The results of this study provide some predictive validity support for the relationship between psychological factors measured by the 16PF and principal performance. While the results are not dramatic, they do appear consistent with previous work (Cattell, et al.,

1986). Three of the five components of Cattell's QIV second stratum factors were significantly correlated with the criterion measure, and the other two, although not significant, were in the expected direction; that is, they were either positively or negatively correlated with principal performance. This broad factor, composed of the E, L, M, Q_1, and Q_2 dimensions have been interpreted by Cattell and associates as reflecting a subdueness - independence continuum. An individual scoring high on this factor is described by the test authors as "independent, radical, autistic, projective, and a law unto himself" (Cattell, et al., 1986, p. 120), and as having "a general temperamental independence in the broadest sense" (p. 119). Popular books on leadership (Bennis, 1989; Nanus, 1989; Yukl, 1989; Zaleznik, 1989) portray superior leaders as possessing characteristics such as assertiveness, self-confidence, and independence. Supervisor, peer, and subordinate ratings of principals reinforced the popular conceptions of Cattell's executive personality structure.

Turning now to the specific source traits composing Cattell's QIV second stratum factors, it is easy to see why Factor E received highest priority on the QIV second stratum scale. It is understandable that an assertive, self-assured, dominant, independent minded, aggressive, and competitive principal would receive high ratings on performance.

Although Factor L was not significantly related to the criterion measure, it was in the expected direction and negatively correlated with principal performance. This finding was expected. Cattell interprets L+ as an indication of social insecurity, suspicion, dogmatism, jealousy, and irritability; therefore, it supports the negative correlation with high performance ratings.

The results concerning Factors Q_1 and Q_2 are also consistent with Cattell's profile of the successful executive. Cattell, et al. (1986) indicated that Factor Q_1+ reflects liberalism and an analytical, free-thinking approach, and Q_2+ (while not significantly related to performance was in the expected direction) characterizes individuals who prefer their own decisions, are self-sufficient, and show resourcefulness.

Cattell's Factor M does not appear to be a particularly desirable trait in school leaders. Individuals who score high on M are described as imaginative, careless of practical matters, unconventional, and absent-minded. However, Fox and others (1981) conducted a content analysis of the items which comprise Factor M, which have led them to an alternative conception of the scale. These researchers interpret M+ individuals as preferring to deal with dynamic, essential matters rather than with superfluous, marginal issues. Moreover, persons high on this factor according to Fox et al. are more open to interaction with those different from themselves, not necessarily out of friendliness, but because of

curiosity coupled with self-confidence, which reduces fear and suspicion of the unfamiliar (p. 520). This interpretation of the M dimension fits the demands of an urban principal to deal with essentials and to interact with a diverse school population.

Results concerning Factor A are also consistent with previous work. The 16PF test authors suggest Factor A as another personality trait discriminating superior executives, along with Factors H, N, Q_1, and Q_3 (Cattell, et al., 1986). However, Factors H, N, and Q_3 were not significantly correlated with performance in the present study. Those individuals high in Factor A are good natured, easy going, emotionally expressive, ready to cooperate, attentive to people, softhearted, kindly, and adaptable. The traits which Cattell associated with Factor A appear to be desirable in principals.

In conclusion, the prototypic profile of the superior principal which emerges from this data is consistent with other findings (Cattell et al, 1986). The present data depict the superior principal as more educated, assertive, imaginative, self-sufficient, and warmhearted. In addition, the findings offered some evidence of the value of the 16PF, particularly Cattell's second stratum factors (E, L, M, Q_1, Q_2), in predicting principal's performance ratings. However, the study failed to predict the way in which principal's spend their time from either their performance ratings or personality profiles.

REFERENCES

Bennis, W. (1989). The unconscious conspiracy: Why leaders can't lead. San Francisco, CA.: Jossey-Bass.

Cattell, R., Eber, H., & Tatsuoka, M. (1986). Handbook for the sixteen personality factor questionnaire (16PF). Champaign, IL.: Institute for Personality and Ability Testing.

Fox, S., Haboucha, S., & Dinur, Y. (1981). The predictive validity of the sixteen personality factors questionnaire relative to three independent criterion measures of military performance, Educational and Psychological Measurement, 42, 515-521.

Leap, T. L. & Crino, M. D. (1989). Personnel/human resource management. New York: Macmillan,

Mathis, R. L. & Jackson, J. H. (1988). Personnel: human resource management, 5th ed. St. Paul: West

Miner, J. B. (1985). Personnel and industrial relations, 4th ed. New York: Macmillan.

Mintzberg, H. (1973). The nature of managerial work. Englewood Cliffs, NJ: Prentice-Hall.

Nanus, B. (1989). The leader's edge: The seven keys to leadership in a turbulent world. Chicago, IL.: Contemporary Books

Schuler, R. S. & Youngblood, S. A. (1986). Effective Personnel Management, 2nd ed. St. Paul: West.

Wolcott, H. (1973). The man in the principal's office: An ethnography. New York: Holt, Rinehart and Winston.

Yukl, G. A. (1989). Leadership in organizations, 2nd ed. Englewood Cliffs, NJ: Prentice-Hall.

Zaleznik, A. (1989). Managerial mystique: restoring leadership in business. New York: Harper & Row.

Table 1

Multiple Regression Analysis of Personality Factors and Demographic Variables with Principal Performance

Criterion Variable							Constant	R	R^2	F
Principal Performance Rating		X_1	X_2	X_3	X_4	X_5				
	beta	.48	.28	.12	.09	.13	21.4	.64	.41	4.68*
	R	.49	.60	.62	.62	.64				

X_1 = Factor E, X_2 = Factor M, X_3 = Factor Q_2, X_4 = Factor A, X_5 = Education Level * $p < .01$